45 980

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

SEARCH REQUEST FORM

Requestor's Name: Irene Marx Serial Number: 09/582 482

Date: 7/3/01 Phone: 308-2922 Art Unit: 1651 / 10E05

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Search Topic:

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevent citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevent claim(s).

Please search inventors

enzymatic process 4 hydroxypyruvate (HPP)

→ homogentisate (HMO)

HPP $\xrightarrow{enz.1}$ 4-hydroxyphenyl acetate (HPA)

HPA $\xrightarrow{enz2}$ HMO

a) enz1 = HPP-oxidase -
bacteria
Arthrobacter

b) enz2 = HPA hydroxylase
Pseudomonas
Xanthobacter
Flavobacterium
Bacillus
Nocardia
Rhodococcus

enz1 + enz2 y one pot reaction

Point of Contact:
Susan Hanley
Technical Info. Specialist
CM1 12C14 Tel: 305-4053

STAFF USE ONLY

7/3

Date completed: 7/25
Searcher: Hanley
Terminal time: 60
Elapsed time: 40 pap
CPU time:
Total time:
Number of Searches:
Number of Databases:

Search Site
- ____ STIC
- ____ CM-1
- ____ Pre-S

Type of Search
- ____ N.A. Sequence
- ____ A.A. Sequence
- 3 Structure
- ____ Bibliographic

Vendors
- ____ IG
- 9465 STN
- ____ Dialog
- ____ APS
- ____ Geninfo
- ____ SDC
- ____ DARC/Questel
- ____ Other

PTO-1590 (9-90)

```
=> d his

     (FILE 'HOME' ENTERED AT 19:09:17 ON 25 JUL 2001)

     FILE 'HCAPLUS' ENTERED AT 19:09:31 ON 25 JUL 2001
L1           20 S DEROSE R?/AU
L2           22 S SAILLAND A?/AU
L3           40 S L1-2
L4          264 S HOMOGENTISAT?
L5            3 S L3 AND L4
                SELECT RN L5 1-3

     FILE 'REGISTRY' ENTERED AT 19:10:48 ON 25 JUL 2001
L6            9 S E1-9
                E HOMOGENTISAT/CN
L7            1 S E12
                E HPP/CN
L8            1 S L6 AND C8 H8 O3/MF
                E 4-HYDROXYBENZENEACETAT/CN
L9            1 S E5
L10           1 S L6 AND C9 H8 O4/MF
                E 3-(P-HYDROXYPHENYL)PYRUVAT/CN

     FILE 'HCAPLUS' ENTERED AT 19:23:05 ON 25 JUL 2001
L11           3 S L5 AND L6
L12        3008 S L7 OR HOMOGENTISAT? OR HMO OR  HOMOGENTISIC ACID
L13        6500 S HPA OR  4-HYDROXYPHENYL(W)ACET? OR L8-9
L14         105 S L12 AND L13
L15           0 S L12(L)PREP/RL AND L13(L)RCT/RL
L16           3 S L12(L)PREP/RL AND L13
L17      200879 S ?HYDROXYLASE? OR  ?OXYGENASE? OR PSEUDOMONAS OR XANTHOBACTER
L18          21 S L14 AND L17
L19          24 S L16 OR L18
                S 55326-44-8/REG#

     FILE 'REGISTRY' ENTERED AT 19:40:11 ON 25 JUL 2001
L20           1 S 55326-44-8/RN

     FILE 'HCAPLUS' ENTERED AT 19:40:11 ON 25 JUL 2001
L21          14 S L20
L22           7 S L21 AND L14
L23          24 S L19 OR L22
L24        2068 S L10 OR HPP OR ?HYDROXYPHENYLPYRUV?
L25         124 S L24 AND L13
L26           3 S L13(L)PREP/RL AND L24
                S 78213-74-8/REG# OR ?OXIDASE? OR BACTERI## OR ARTHROBACTER

     FILE 'REGISTRY' ENTERED AT 19:43:58 ON 25 JUL 2001
L27           1 S 78213-74-8/RN

     FILE 'HCAPLUS' ENTERED AT 19:43:59 ON 25 JUL 2001
L28           2 S L27
L29      492510 S L28 OR ?OXIDASE? OR BACTERI## OR ARTHROBACTER
L30          22 S L29 AND L25
L31          23 S L28 OR L30
L32           3 S L23 AND L31
L33           2 S L32 NOT L11
L34          23 S L30-31
L35          20 S L34 NOT L32
L36           3 S L12(L)BPN/RL
L37           9 S L13(L)BPN/RL
L38           1 S L36 AND L37
L39           0 S L38 NOT L11
L40           2 S L36 NOT L11
L41           2 S L40 NOT L23
L42           8 S L37 NOT (L36 OR L31)

     FILE 'CASREACT' ENTERED AT 19:56:20 ON 25 JUL 2001
L43             STR
L44           0 S L43
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inventor search

3 cites w/ 9 epds displayed

HMO

HPA

HPA hydroxylase

24 cites for HPA → HMO by enz or bug

L13 → HPA

HPP oxidase

23 cites for HPP [O] → HPA

2 cites have both ½ rxn's

20 cites w/ either ½ rxn

BPN/RL = Biosynthetic prep/role

2 cites

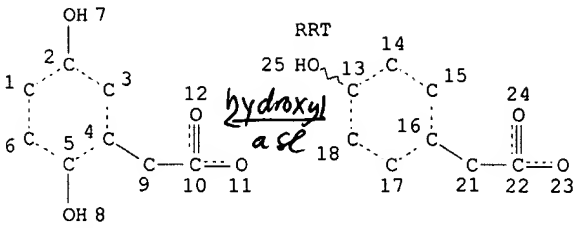
8 cites

L45	1 S L43 FUL	← HPA (enz) → Hmo
L46	STR L43	
L47	0 S L46	
L48	2 S L46 FUL	← HPP [ox] → HPA
L49	1 S L45 AND L48	← cite w/ both ½ rxn's (appl. work)
L50	1 S L48 NOT L49	← non enzymatic

Cas ½ rxn react


```
=> d que l45
L43                 STR
```

PRO

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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  23

STEREO ATTRIBUTES: NONE
L45           1 SEA FILE=CASREACT SSS FUL L43 (     1 REACTIONS)
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Casreact ½ rxn


```
=> d que l48
L46              STR
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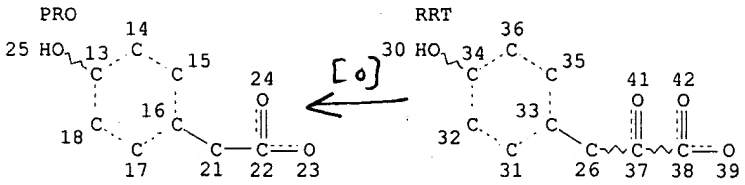


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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  24

STEREO ATTRIBUTES: NONE
L48           2 SEA FILE=CASREACT SSS FUL L46 (     2 REACTIONS)
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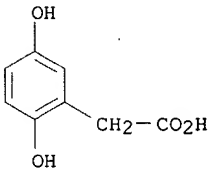
=> d bib abs hitstr 1

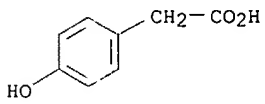
L11 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:785817 HCAPLUS
DN 131:350339
TI Process for enzymic preparation of **homogentisate**
IN **Sailland, Alain; Derose, Richard**
PA Rhone Poulenc Agrochimie, Fr.
SO Fr. Demande, 11 pp.
CODEN: FRXXBL
DT Patent
LA French
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2772789	A1	19990625	FR 1997-16727	19971224
	FR 2772789	B1	20001124		
	WO 9934008	A1	19990708	WO 1998-FR2819	19981222
	W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9918808	A1	19990719	AU 1999-18808	19981222
	EP 1042496	A1	20001011	EP 1998-963586	19981222
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
PRAI	FR 1997-16727	A	19971224		
	WO 1998-FR2819	W	19981222		

OS CASREACT 131:350339
AB A procedure for producing **homogentisate** from 4-hydroxyphenylpyruvate is disclosed, characterized in that it consists of sequential enzymic reactions: conversion of 4-hydroxyphenylpyruvate to 4-hydroxyphenylacetate by an appropriate enzyme, followed by conversion of 4-hydroxyphenylacetate to **homogentisate** by a 2nd enzyme.
IT **451-13-8P**, Homogentisic acid
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(enzymic prepn. of **homogentisate**)
RN 451-13-8 HCAPLUS
CN Benzeneacetic acid, 2,5-dihydroxy- (9CI) (CA INDEX NAME)



IT **156-38-7P**, 4-Hydroxyphenylacetic acid
RL: BPN (Biosynthetic preparation); BPR (Biological process); BIOL (Biological study); PREP (Preparation); PROC (Process)
(enzymic prepn. of **homogentisate**)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

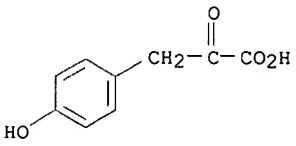


IT **55326-44-8P 78213-74-8P**, 4-Hydroxyphenylpyruvate oxidase
RL: BPN (Biosynthetic preparation); CAT (Catalyst use); BIOL (Biological

study); PREP (Preparation); USES (Uses)
(enzymic prepn. of **homogentisate**)
RN 55326-44-8 HCAPLUS
CN Oxygenase, 4-hydroxyphenylacetate 1-mono- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 78213-74-8 HCAPLUS
CN Oxidase, p-hydroxyphenylpyruvate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **156-39-8**
RL: BPR (Biological process); RCT (Reactant); BIOL (Biological study); PROC,(Process)
(enzymic prepn. of **homogentisate**)
RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



=> d bib abs hitstr 2

L11 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:554971 HCAPLUS
DN 131:283292
TI Crystal structure of Pseudomonas fluorescens 4-hydroxyphenylpyruvate dioxygenase: an enzyme involved in the tyrosine degradation pathway
AU Serre, Laurence; **Sailland, Alain**; Sy, Denise; Boudec, Philippe; Rolland, Anne; Pebay-Peyroula, Eva; Cohen-Addad, Claudine
CS Institut de Biologie Structurale "Jean-Pierre Ebel", CNRS/CEA, Grenoble, 38027, Fr.
SO Structure (London) (1999), 7(8), 977-988
CODEN: STRUE6; ISSN: 0969-2126
PB Current Biology Publications
DT Journal
LA English
AB In plants and photosynthetic bacteria, the tyrosine degrdn. pathway is crucial because **homogentisate**, a tyrosine degrdn. product, is a precursor for the biosynthesis of photosynthetic pigments, such as quinones or tocophenols. **Homogentisate** biosynthesis includes a decarboxylation step, a dioxygenation and a rearrangement of the pyruvate sidechain. This complex reaction is carried out by a single enzyme, 4-hydroxyphenylpyruvate dioxygenase (I), a non-heme Fe-dependent enzyme that is active as a homotetramer in bacteria and as a homodimer in plants. Moreover, in humans, I deficiency is found to be related to tyrosinemia, a rare hereditary disorder of tyrosine catabolism. Here, the authors report the crystal structure of P. fluorescens I refined to 2.4 .ANG. resoln. (Rfree = 27.6%; R-factor = 21.9%). The general topol. of the protein comprised 2 barrel-shaped domains and was similar to the structures of Pseudomonas 2,3-dihydroxybiphenyl dioxygenase (II) and P. putida catechol 2,3-dioxygenase (III). Each structural domain contained 2 repeated .beta..alpha..beta..beta..beta..alpha. modules. There was 1 non-heme Fe atom per monomer liganded to the side-chains of His-161, His-240, Glu-322, and 1 acetate mol. The anal. of the I structure and its superposition with the structures of II and III highlighted some important differences in the active sites of these enzymes. These comparisons also suggested that the pyruvate part of the I substrate (4-hydroxyphenylpyruvate) and the O2 mol. would occupy the 3 free coordination sites of the catalytic Fe atom. This substrate-enzyme model will aid the design of new inhibitors of the **homogentisate** biosynthesis reaction.
IT **7439-89-6**, Iron, biological studies
RL: BPR (Biological process); PRP (Properties); BIOL (Biological study); PROC (Process)
(coordination of iron in Pseudomonas fluorescens 4-hydroxyphenylpyruvate dioxygenase)
RN 7439-89-6 HCAPLUS
CN Iron (7CI, 8CI, 9CI) (CA INDEX NAME)

Fe

IT **9029-72-5**, 4-Hydroxyphenylpyruvate dioxygenase
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(crystal structure of Pseudomonas fluorescens 4-hydroxyphenylpyruvate dioxygenase)
RN 9029-72-5 HCAPLUS
CN Oxygenase, 4-hydroxyphenylpyruvate di- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RE.CNT 50
RE
(1) Awata, H; Genomics 1994, V23, P534 HCAPLUS
(3) Bergdoll, M; Protein Sci 1998, V7, P1661 HCAPLUS
(4) Bradley, F; J Biol Chem 1986, V261, P11693 HCAPLUS
(7) Cameron, A; EMBO J 1997, V16, P3386 HCAPLUS
(8) Carson, M; Methods Enzymol 1997, V277, P493 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs hitstr 3

L11 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2001 ACS
AN 1997:544849 HCAPLUS
DN 127:244756
TI Subcellular localization and purification of a p-hydroxyphenylpyruvate dioxygenase from cultured carrot cells and characterization of the corresponding cDNA
AU Garcia, Isabelle; Rodgers, Matthew; Lenne, Catherine; Rolland, Anne; **Sailland, Alain**; Matringe, Michel
CS Unite Mixte CNRS/Rhone-Poulenc (UMR 41), Rhone-Poulenc Agrochimie, Lyon, 69263, Fr.
SO Biochem. J. (1997), 325(3), 761-769
CODEN: BIJOAK; ISSN: 0264-6021
PB Portland Press
DT Journal
LA English
AB P-Hydroxyphenylpyruvate dioxygenase catalyzes the transformation of p-hydroxyphenylpyruvate into **homogentisate**. In plants this enzyme has a crucial role because **homogentisate** is the arom. precursor of all prenyl-quinones. Furthermore this enzyme was recently identified as the mol. target for new families of potent herbicides. In this study we examine precisely the localization of p-hydroxyphenylpyruvate dioxygenase activity within carrot cells. Our results provide evidence that, in cultured carrot cells, p-hydroxyphenylpyruvate dioxygenase is assocd. with the cytosol. Purifn. and SDS/PAGE anal. of this enzyme revealed that its activity is assocd. with a polypeptide of 45-46 kDa. This protein specifically cross-reacts with an antiserum raised against the p-hydroxyphenylpyruvate dioxygenase of Pseudomonas fluorescens. Gel-filtration chromatog. indicates that the enzyme behaves as a homodimer. We also report the isolation and nucleotide sequence of a cDNA encoding a carrot p-hydroxyphenylpyruvate dioxygenase. The nucleotide sequence (1684 bp) encodes a protein of 442 amino acid residues with a mol. mass of 48094 Da and shows specific C-terminal regions of similarity with other p-hydroxyphenylpyruvate dioxygenases. This cDNA encodes a functional p-hydroxyphenylpyruvate dioxygenase, as evidenced by expression studies with transformed Escherichia coli cells. Comparison of the N-terminal sequence of the 45-46 kDa polypeptide purified from carrot cells with the deduced peptide sequence of the cDNA confirms that this polypeptide supports p-hydroxyphenylpyruvate dioxygenase activity. Immunodetection studies of the native enzyme in carrot cellular exts. reveal that N-terminal proteolysis occurs during the process of purifn. This proteolysis explains the difference in mol. masses between the purified protein and the deduced polypeptide.
IT **195397-27-4P**
RL: BOC (Biological occurrence); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(amino acid sequence; cytosolic localization and purifn. of homodimeric p-hydroxyphenylpyruvate dioxygenase from cultured carrot cells and sequencing of corresponding cDNA)
RN 195397-27-4 HCAPLUS
CN Oxygenase, 4-hydroxyphenylpyruvate di- (carrot) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9029-72-5P**, p-Hydroxyphenylpyruvate dioxygenase
RL: BOC (Biological occurrence); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(cytosolic localization and purifn. of homodimeric p-hydroxyphenylpyruvate dioxygenase from cultured carrot cells and sequencing of corresponding cDNA)
RN 9029-72-5 HCAPLUS
CN Oxygenase, 4-hydroxyphenylpyruvate di- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **194130-55-7**, GenBank U87257
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(nucleotide sequence; cytosolic localization and purifn. of homodimeric

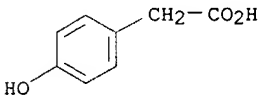
p-hydroxyphenylpyruvate dioxygenase from cultured carrot cells and sequencing of corresponding cDNA)
RN 194130-55-7 HCAPLUS
CN DNA (carrot 4-hydroxyphenylpyruvate dioxygenase cDNA plus flanks) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

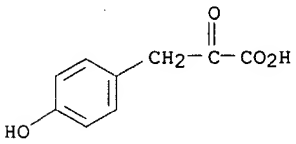
=> d bib abs hitstr 1

L33 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2001 ACS
AN 1995:733116 HCAPLUS
DN 123:193271
TI L-Phenylalanine and L-tyrosine degradative pathways in **Rhodococcus** erythropolis
AU Suemori, Akio; Nakajima, Kenji; Kurane, Ryuichiro; Nakamura, Yoshihiro
CS Natl. Inst. Biosci. Hum.-Technol., Tsukuba, 305, Japan
SO Seimei Kogaku Kogyo Gijutsu Kenkyusho Kenkyu Hokoku (1995), 3(2), 33-6
CODEN: SKGIEM; ISSN: 0919-5351
DT Journal
LA English
AB **Rhodococcus** erythropolis strain S1 was shown to degrade L-phenylalanine via phenylpyruvate and **homogentisate** and L-tyrosine through p-**hydroxyphenylpyruvate**, p-hydroxyphenylacetate, and **homogentisate**, which were conducted from oxygen consumption with intact cells, thin layer chromatog., and high performance liq. chromatog. expts. These pathways are in good agreement with that obsd. in **Nocardia** sp. and Streptomyces sp. L-Phenylalanine and L-tyrosine would appear to be transaminated by arom. amino acid **oxidase**. Arom. amino acid **oxidase**, p-hydroxyphenylacetate 1-**hydroxylase**, and **homogentisate** 1,2-**dioxygenase** activities were inducible by L-tyrosine or L-phenylalanine in strain S1.
IT **55326-44-8**, p-Hydroxyphenylacetate 1-**hydroxylase**
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(in L-phenylalanine and L-tyrosine degradative pathways in **Rhodococcus** erythropolis)
RN 55326-44-8 HCAPLUS
CN Oxygenase, 4-hydroxyphenylacetate 1-mono- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **156-38-7**, p-Hydroxyphenylacetic acid **156-39-8**, p-**Hydroxyphenylpyruvic** acid **451-13-8**, **Homogentisic acid**
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(L-phenylalanine and L-tyrosine degradative pathways in **Rhodococcus** erythropolis)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



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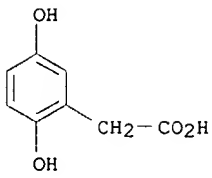
CN Benzeneacetic acid, 2,5-dihydroxy- (9CI) (CA INDEX NAME)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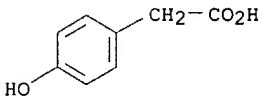
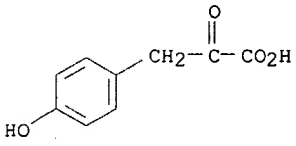
L33 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2001 ACS
AN 1976:519378 HCAPLUS
DN 85:119378
TI Catabolism of L-tyrosine by the homoprotocatechuate pathway in Gram-positive **bacteria**
AU Sparnins, Velta L.; Chapman, Peter J.
CS Coll. Biol. Sci., Univ. Minnesota, St. Paul, Minn., USA
SO J. Bacteriol. (1976), 127(1), 362-6
CODEN: JOBAAY
DT Journal
LA English
AB A metabolic pathway for L-tyrosine catabolism involves 3,4-dihydroxyphenylacetic acid (homoprotocatechuic acid) as substrate for fission of the benzene nucleus. Cell exts. of an organism tentatively identified as a Micrococcus possessed the enzymes required for degrading homoprotocatechuate to succinate and pyruvate, and stoichiometry was established for several of these reactions. When the required coenzymes were added, cell exts. degraded L-tyrosine to the ring-fission product of homoprotocatechuate 2,3-**dioxygenase** and also converted 4-**hydroxyphenylpyruvic** acid into 4-hydroxyphenylacetic acid. This compd., in turn, gave stoichiometric amts. of the ring-fission product of homoprotocatechuate by the action of a NADP-dependent 3-**hydroxylase** coupled with homoprotocatechuate 2,3-**dioxygenase**. Evidence is presented that this route for L-tyrosine catabolism is taken by 5 other gram pos. strains, including Micrococcus lysodeikticus and a species of **Bacillus**. Five other gram pos. **bacteria** from other genera employed the alternative **homogentisate** pathway.
IT **156-38-7 156-39-8**
RL: RCT (Reactant)
(oxidn. of, by Micrococcus, pathway of)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

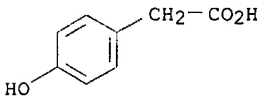


RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



=> d bib abs hitstr 1

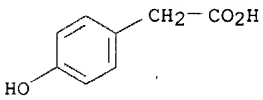
L35 ANSWER 1 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:374814 HCAPLUS
DN 131:141884
TI 4-hydroxybenzoic acid: a likely precursor of 2,4,6-tribromophenol in Ulva lactuca
AU Flodin, Carina; Whitfield, Frank B.
CS Food Science Australia, North Ryde, 1670, Australia
SO Phytochemistry (1999), 51(2), 249-255
CODEN: PYTCAS; ISSN: 0031-9422
PB Elsevier Science Ltd.
DT Journal
LA English
AB The green marine alga Ulva lactuca is known to contain simple bromophenols, esp. 2,4,6-tribromophenol, but the precursor of these compds. in the alga is not known. With the aim of identifying potential precursors, the alga was analyzed for the presence of phenolic compds. The compds. identified by gas chromatog.-mass spectrometry were phenol, 4-hydroxybenzoic acid, 4-hydroxyphenylacetic acid, 4-hydroxyphenyllactic acid, 4-hydroxybenzaldehyde, 3,5-dibromo-4-hydroxybenzoic acid and 2,4,6-tribromophenol. Free L-tyrosine and free L-phenylalanine were also present in the alga. Furthermore, a crude enzyme ext. from the alga, which contained **bromoperoxidases**, was used to brominate a range of phenolic compds. and the formation of bromophenols was monitored. The compds. forming 2,4,6-tribromophenol were phenol, 4-hydroxybenzoic acid, 4-hydroxyphenylacetic acid, 4-hydroxybenzyl alc. and 2-hydroxybenzyl alc. 4-Hydroxybenzoic acid is designated as the most likely precursor of 2,4,6-tribromophenol in U. lactuca and a pathway for its formation from L-tyrosine, via 4-**hydroxyphenylpyruvic** acid, is proposed.
IT **156-38-7**, 4-Hydroxyphenylacetic acid
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(4-hydroxybenzoic acid: likely precursor of 2,4,6-tribromophenol in Ulva lactuca)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



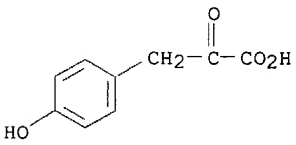
RE.CNT 12
RE
(1) Butler, A; Chem Rev 1993, V93, P1937 HCAPLUS
(4) Heimler, D; Chromatographia 1994, V38, P475 HCAPLUS
(5) Hewson, W; J Phycol 1980, V16, P340 HCAPLUS
(6) Landymore, A; Phycologia 1978, V17, P319 HCAPLUS
(7) Manley, S; FEBS Lett 1978, V93, P97 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs hitstr 2

L35 ANSWER 2 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1998:455961 HCAPLUS
DN 129:185307
TI Conversion of tyrosine to phenolic derivatives by Taiwan cobra venom
AU Nucaro, Elvira; Jodra, Maite; Russell, Emma; Anderson, Loïs; Dennison, Philip; Dufton, Mark
CS Dep. Pure Appl. Chem., Univ. Strathclyde, Glasgow, G1 1XL, UK
SO Toxicon (1998), 36(8), 1173-1187
CODEN: TOXIA6; ISSN: 0041-0101
PB Elsevier Science Ltd.
DT Journal
LA English
AB We have examd. the ability of Taiwan cobra (Naja naja atra) venom to transform in vitro the amino acid tyrosine to phenolic oxidn. products via 4-**hydroxyphenylpyruvate**. This amino acid can be released from neuropeptide substrates by oligopeptidases present in the venom. Using a variety of anal. techniques to probe a complicated series of reactions, we confirm that the L-amino acid **oxidase** present in the venom initially releases the keto form of 4-**hydroxyphenylpyruvic** acid and hydrogen peroxide after reacting with the tyrosine. Thereafter, there is evidence that a tautomerase in the venom promotes a partial conversion of the keto-form 4-**hydroxyphenylpyruvic** acid into an enol form. The enol is oxidized primarily to 4-hydroxybenzaldehyde and 4-hydroxyphenylacetic acid by the hydrogen peroxide co-released by the L-amino acid **oxidase**. The venom promotes both these spontaneous oxidn. routes and also generates traces of other phenolics, some of which are as yet unidentified. We propose that reactions between the precursors of the major oxidn. products may be responsible for generating unusual short-lived phenolics, possibly giving rise to special bioactivities that are relevant to venom action.
IT **156-38-7**, 4-Hydroxyphenylacetic acid **156-39-8**
RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(conversion of tyrosine to phenolic derivs. by Taiwan cobra venom)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

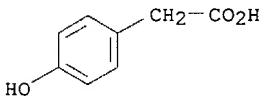


RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)

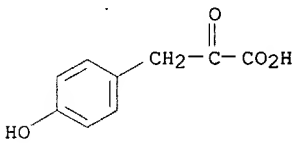


=> d bib abs hitstr 3

L35 ANSWER 3 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1990:104435 HCAPLUS
DN 112:104435
TI Isolation and characterization of surfactant degrading **bacteria** in a marine environment
AU Sigoillot, Jean Claude; Nguyen, Marie Helene
CS Lab. Microbiol., Fac. Sci. Tech. Saint-Jerome, Marseille, 13397, Fr.
SO FEMS Microbiol. Ecol. (1990), 73(1), 59-67
CODEN: FMECEZ; ISSN: 0168-6496
DT Journal
LA English
AB Seawater and sediment samples from near the coasts of Hyeres Bay, France, were used for anionic surfactant titrns. with surface and bottom waters and the finest part of sediments. The capacity for surfactant degrdn. by the in situ microflora was evaluated. Using a selective plating technique, 26 strains able to utilize anionic surfactant were isolated from the selected **bacterial** communities. Their ability to degrade anionic surfactants was verified according to the biodegrdn. std. method. Isolated strains were characterized by morphol. and physiol. properties using the API 20 NE micro-method. All tested strains were Gram neg., strictly aerobic, rod or helical shaped. Their weak utilization of phenolic substrates suggests that they degrade preferentially the alkyl chain of the surfactant mol. Biodegrdn. was more efficient with **bacterial** communities rather than with any isolated strains. Such observations indicate that complete mineralization involves several other so far nonisolated strains which complete the degrdn. initiated by the isolated strains.
IT **156-38-7**, **4-Hydroxyphenyl acetic acid 156-39-8**
RL: BIOL (Biological study)
(anionic surfactant biodegrdn. by marine **bacteria** in presence of)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

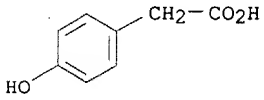


RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)

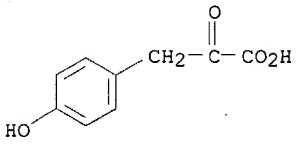


=> d bib abs hitstr 4

L35 ANSWER 4 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1989:494267 HCAPLUS
DN 111:94267
TI Urinary organic acid excretion by babies born before 33 weeks of gestation
AU Walker, Valerie; Mills, Graham A.
CS Univ. Southampton, Southampton, S09 4XY, UK
SO Clin. Chem. (Winston-Salem, N. C.) (1989), 35(7), 1460-6
CODEN: CLCHAU; ISSN: 0009-9147
DT Journal
LA English
AB Using anal. procedures that are widely used by labs. investigating metabolic disorders, urinary org. acid excretion was investigated in premature neonates who were receiving the usual clin. care. The purpose of this study was to provide a basis for the diagnosis of inherited org. acid defects. One-hundred-twenty-seven random (untimed) urine samples collected weekly from 22 infants of 25-32 wk of gestation (median, 28 wk) were analyzed. A wide variety of org. acids was excreted. After oximation, they were extd. with EtOAc and Et2O, derivatized to trimethylsilyl forms, and analyzed by gas-liq. chromatog. on a nonpolar fused silica capillary column, with mass spectrometry for identification. Profiles for individual babies varied markedly on different occasions, reflecting their metabolic status and **bacterial** activity in the gut. There was no significant ketonuria. Three metabolites identified for the 1st time in urine from normal neonates were 2,3-butanediol, 3-hydroxy-2-butanone (acetoin), and 4-hydroxy-3-methoxyphenyllactic acid. Increased excretion of 4-hydroxyphenyllactic acid and other phenolic acids occurred during parenteral feeding.
IT **156-38-7**, 4-Hydroxyphenylacetic acid **156-39-8**
RL: BIOL (Biological study)
(of urine, of human premature newborn)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

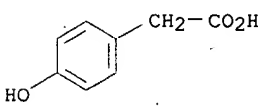


RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)

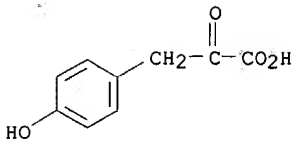


=> d bib abs hitstr 5

L35 ANSWER 5 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1986:569543 HCAPLUS
DN 105:169543
TI The origin of central and peripheral p-hydroxyphenylacetic acid in man and rats
AU Karoum, Farouk
CS Neuropsychiatry Branch, Natl. Inst. Ment. Health, Washington, DC, 20032, USA
SO Neuropsychopharmacol. Trace Amines: Exp. Clin. Aspects, [Trace Amines Symp.], 2nd (1985), 433-50. Editor(s): Boulton, Alan A. Publisher: Humana, Clifton, N. J.
CODEN: 55FHAA
DT Conference
LA English
AB The effects of a no. of monoamine **oxidase** (MAO) inhibitors, 2 types of dopa decarboxylase inhibitors, and neomycin on the prodn. of p-hydroxyphenylacetic acid (PHPA) and catecholamine metabolites were evaluated in an attempt to det. the origin of central and peripheral PHPA in rats. Acute intragastric (I.G.) administration of pargyline as well as chronic I.G. carbidopa, .alpha.-methyldopa (dopa decarboxylase inhibitors), and neomycin treatments failed to reduce PHPA concn. in the brain and urine, suggesting minor roles of gut flora and endogenously produced p-tyramine (p-Ty) in the overall body prodn. of PHPA. Neomycin reduced p-Ty and increased PHPA excretion. The excretions of the catecholamine metabolites phenylethylamine (PEA) and p-Ty excretions were altered according to the expected mode of action of the drugs employed. Paradoxically, carbidopa (like .alpha.-methyldopa) reduced hypothalamic norepinephrine and its metab., suggesting a central influence of carbidopa. Chronic administration of 3 types of MAO inhibitors, pargyline, clorgyline, and deprenyl, failed to reduced urine and brain PHPA. These drugs produced changes in PEA and catecholamine metabolite excretion and brain content that are consistent with effective inhibition of either or both MAO type A and B. Whereas body p-Ty is derived from p-tyrosine decarboxylation, most central and peripheral PHPA in rats and possibly man appears to originate from p-tyrosine transamination to p-**hydroxyphenylpyruvic** acid followed by decarboxylation to PHPA. The administration p-**hydroxyphenylpyruvic** acid elevated the excretion of PHPA as well as p-hydroxyphenyllactic acid and homogentisic acid. Blockade of p-tyrosine decarboxylation by carbidopa also elevateed the excretion of deuterated PHPA derived from administered deuterated p-tyrosine, adding support to the above conclusion. The contribution of p-Ty metab. towards total body output of PHPA is <30%. The role of the gut flora in the prodn. of PEA and catecholamine metabolites appears to be minor. p-Ty was almost completely excreted in rats in the conjugated form. In contrast most urine PHPA (.apprx.80%) and PEA (70-90%) are excreted unconjugated. It appears that the metab. and turnover rate of p-Ty cannot be assessed from the assay of PHPA.
IT **156-38-7**
RL: FORM (Formation, nonpreparative)
(formation of, by brain and peripheral tissue, monoamine **oxidase** inhibition effect on)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

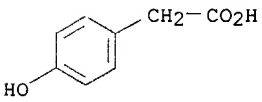


IT **156-39-8**
RL: BIOL (Biological study)
(hydroxyphenylacetate formation from, by brain and peripheral tissue)
RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)

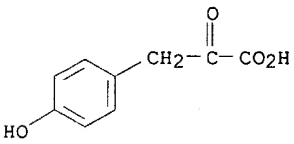


=> d bib abs hitstr 6

L35 ANSWER 6 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1986:144087 HCAPLUS
DN 104:144087
TI Flavin nucleotide-dependent 3-hydroxylation of 4-hydroxyphenylpropanoid carboxylic acids by particulate preparations from potato tubers
AU Boniwell, Jeremy M.; Butt, Vernon S.
CS Bot. Sch., Oxford Univ., Oxford, OX1 3RA, UK
SO Z. Naturforsch., C: Biosci. (1986), 41(1-2), 56-60
CODEN: ZNCBDA; ISSN: 0341-0382
DT Journal
LA English
AB Particulate prepns. from potato tubers, extd. in 4 mM 2-mercaptoethanol, catalyze the 3-hydroxylation of 4-hydroxyphenylpropanoid carboxylic acids, including p-coumaric acid and tyrosine, in the presence of NADH (or NADPH) and FAD (or FMN); ascorbate could not substitute for these electron donors. Among a range of 4-hydroxylated C6-C2 and C6-C1 compds. tested, only 4-hydroxyphenylacetic acid and p-cresol were hydroxylated. The hydroxylase was sensitive to KCN and diethyldithiocarbamate and showed some features of phenolase hydroxylation, but no DOPA **oxidase** or chlorogenic acid **oxidase** activity was exhibited under these conditions. The phenolase complex, which is confined to potato tuber particles, presumably catalyzes the hydroxylation in whole or part. Activation of enzymes for chlorogenic acid formation by exposure of tubers to light was obsd.
IT **156-38-7 156-39-8**
RL: RCT (Reactant)
(hydroxylation of, by potato tuber)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



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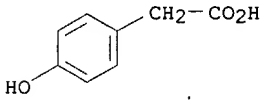
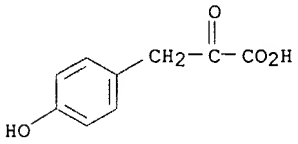
L35 ANSWER 7 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1985:519560 HCAPLUS
DN 103:119560
TI The degradation of 1-phenylalkanes by an oil-degrading strain of Acinetobacter lwoffi
AU Amund, O. O.; Higgins, I. J.
CS Biotechnol. Cent., Cranfield Inst. Technol., Cranfield/Bedford, MK43 0AL, UK
SO Antonie van Leeuwenhoek (1985), 51(1), 45-56
CODEN: ALJMAO; ISSN: 0003-6072
DT Journal
LA English
AB An oil-degrading **bacterium** identified as A. lwoffi was isolated by elective culture on North Sea Forties crude oil from an activated sludge sample. It grew on a wide range of n-alkanes (C12-C28) and 1-phenylalkanes, including 1-phenyldodecane, 1-phenyltridecane, and 1-phenyltetradecane. The organism degraded 1-phenyldodecane to phenylacetic acid, which was further metabolized via homogentisic acid, whereas 1-phenyltridecane was transformed to trans-cinnamic and 3-phenylpropionic acid, which were not further metabolized. Evidence is presented for a relationship between arom. amino acid catabolism and 1-phenyldodecane degrdn. in this organism.
IT **156-38-7 156-39-8**
RL: BIOL (Biological study)
(in arom. amino acid metab., by Acinetobacter lwoffi)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



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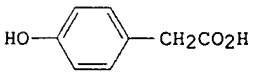
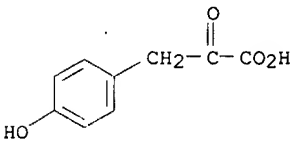
L35 ANSWER 8 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1983:569341 HCAPLUS
DN 99:169341
TI Effects of drugs on the rat striatal concentration of p-hydroxyphenylacetic acid
AU Kobayashi, Kiyofumi; Sato, Fumiko; Shohmori, Toshikiyo
CS Med. Sch., Okayama Univ., Okayama, Japan
SO Neurosciences (Kobe, Jpn.) (1983), 9(1), 82-3
CODEN: NUOCDO
DT Journal
LA Japanese
GI

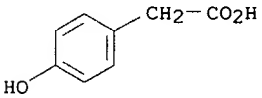


I

AB Chlorpromazine [50-53-3] or sulpiride [15676-16-1] at 20 mg/kg, i.p., had no significant effect on the p-hydroxyphenylacetic acid (I) [**156-38-7**] level in the brain striatum, but sulpiride at 100 mg/kg or pimozide [2062-78-4] at 30 mg/kg decreased it. Apomorphine [58-00-4] was without effect. The precursors .beta.-phenylethylamine [64-04-0] at 15 mg/kg and p-tyramine [51-67-2] at 50 mg/kg increased the I level, whereas the monoamine **oxidase** inhibitor pargyline [555-57-7] at 50 mg/kg decreased it 50%; 4-**hydroxyphenylpyruvic** acid [**156-39-8**] also decreased I, but to a lesser extent.
IT **156-39-8**
RL: BIOL (Biological study)
(hydroxyphenylacetic acid of brain striatum response to)
RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



IT **156-38-7**
RL: BIOL (Biological study)
(of brain striatum, drugs effect on)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

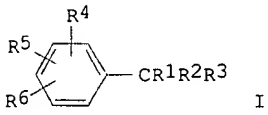


=> d bib abs hitstr 9

L35 ANSWER 9 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1982:62975 HCAPLUS
DN 96:62975
TI Benzene derivatives as bactericides, neoplasm inhibitors, and immune adjuvants
PA Hayashi, Etaku, Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 56115716	A2	19810911	JP 1980-18336	19800216
	JP 02033011	B4	19900725		

GI

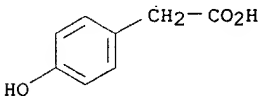


I

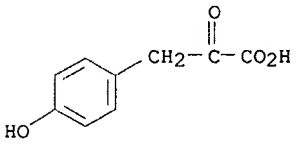
AB The benzene derivs. (I) (R1 = H, OH, Ph, etc; R2 = H or OH; R3 = H, carboxy, alkoxy, etc.; R4 = H, OH, carboxy, etc.; R5 = H, OH, alkoxy, carboxy; R6 = H, OH, alkoxy, etc.) are bactericides, neoplasm inhibitors, and immune adjuvants. Thus, antibacterial activities of 37 compds. such as L(+)-mandelic acid [17199-29-0] against Pseudomonas aeruginosa, Staphylococcus aureus, etc. were demonstrated in mice by administering these drugs orally or i.m. at 0.01-1.0 mg prior to the inoculation of the **bacteria**. DL-4-hydroxy-3-methoxymandelic acid [2394-20-9] (0.1 Mg) inhibited adenoma-180 40% in mice, while homophthalic acid [89-51-0] (0.01-1.0 mg, s.c.) enhanced the immune activity of vaccine against Salmonella.

IT **156-38-7 156-39-8**
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(bactericidal activity of)

RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



=> d bib abs hitstr 10

L35 ANSWER 10 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1981:439751 HCAPLUS
DN 95:39751
TI Tyrosine aminotransferase as the rate-limiting step for tyrosine catabolism in isolated rat liver cells
AU Dickson, Alan J.; Marston, Fiona A. O.; Pogson, Christopher I.
CS Biol. Lab., Univ. Kent, Canterbury/Kent, CT2 9BT, Engl.
SO FEBS Lett. (1981), 127(1), 28-32
CODEN: FEBLAL; ISSN: 0014-5793
DT Journal
LA English
AB The metab. of tyrosine by tyrosine aminotransferase (TAT) was investigated in hepatocytes in various exptl. conditions. The rate of release of 3H2O from L-[side chain-2,3-3H]tyrosine was used as an index of TAT activity. Tyrosine was metabolized at a rate of 0.103 .mu.mol/min/g dry cells. Significant 3H2O formation was obsd. after 5 min of incubation and this synthesis remained linear, until after 2-4 h when decreases were noted. Starved rats showed greater and adrenalectomized rats showed lower TAT activity than controls. Exposure of the cells to glucagon and triamcinolone lead to increased TAT activity. However, the effect on tyrosine metab. was not nearly as pronounced. Perhaps the 2 hormones cause a post-translational modification of TAT.
IT **78213-74-8**
RL: BIOL (Biological study)
(tyrosine metab. by, of hepatocytes, tyrosine aminotransferase in relation to)
RN 78213-74-8 HCAPLUS
CN Oxidase, p-hydroxyphenylpyruvate (9CI) (CA INDEX NAME)

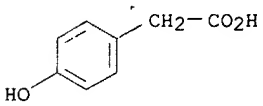
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

=> d ind 10

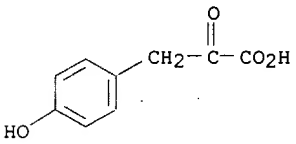
L35 ANSWER 10 OF 20 HCAPLUS COPYRIGHT 2001 ACS
CC 13-2 (Mammalian Biochemistry)
Section cross-reference(s): 2, 18
ST tyrosine aminotransferase hepatocyte glucagon triamcinolone; inanition liver tyrosine aminotransferase
IT Michaelis constant
(of tyrosine aminotransferase)
IT Inanition
(tyrosine aminotransferase of hepatocytes in)
IT Adrenal gland
(tyrosine aminotransferase of hepatocytes in relation to)
IT Liver, metabolism
(hepatocyte, tyrosine aminotransferase of, tyrosine metab. by)
IT 60-18-4, biological studies
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(metab. of, by tyrosine aminotransferase of hepatocytes)
IT 124-94-7 9007-92-5, biological studies
RL: BIOL (Biological study)
(tyrosine aminotransferase of hepatocytes in response to)
IT 9014-55-5
RL: BIOL (Biological study)
(tyrosine metab. by, of hepatocytes)
IT **78213-74-8**
RL: BIOL (Biological study)
(tyrosine metab. by, of hepatocytes, tyrosine aminotransferase in relation to)

=> d bib abs hitstr 11

L35 ANSWER 11 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1981:436227 HCAPLUS
DN 95:36227
TI Inhibition of hydrogen peroxide generation in rat liver mitochondria by radical quenchers and phenolic compounds
AU Swaroop, Anand; Ramasarma, T.
CS Dep. Biochem., Indian Inst. Sci., Bangalore, 560 012, India
SO Biochem. J. (1981), 194(3), 657-65
CODEN: BIJOAK; ISSN: 0306-3275
DT Journal
LA English
AB Scavengers of O2-.bul. and OH.bul. inhibited generation of H2O2 by rat liver mitochondria with choline, glycerol 1-phosphate, and proline as substrates in high-concn. phosphate (or sulfate) buffer; ATP [56-65-5], ADP [58-64-0], thyronine derivs., and a no. of phenolic compds. were also potent inhibitors of H2O2 generation whereas Ph compds. had no effect. Phenolic compds. did not have any effect on mitochondrial superoxide dismutase and choline dehydrogenase activities nor on O2-.bul. generation by the xanthine-xanthine **oxidase** system. Inhibition by phenolic compds. may have potential for regulation of the intracellular concn. of H2O2 which is considered to have a 2nd messenger function.
IT **156-38-7 156-39-8**
RL: BIOL (Biological study)
(hydrogen peroxide generation by liver mitochondria response to)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

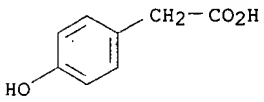


RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



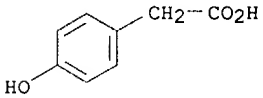
=> d bib abs hitstr 12

L35 ANSWER 12 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1980:109663 HCAPLUS
DN 92:109663
TI Tyrosyluria in marasmus
AU Dhatt, P. S.; Saini, A. S.; Gupta, Indu; Mehta, H. C.; Singh, Harjit
CS Dep. Paediatr., Med. Coll., Rohtak, India
SO Br. J. Nutr. (1979), 42(3), 387-90
CODEN: BJNUAV; ISSN: 0007-1145
DT Journal
LA English
AB High levels of p-hydroxyphenyl acetic acid (I) [**156-38-7**] were excreted by 20 age-matched controls that did not exhibit conventional tyrosyluria, whereas in 30 patients with marasmus, plasma tyrosine [60-18-4] and urinary I and p-hydroxyphenyl lactic acid (II) [306-23-0] levels were higher than in controls. Conventional tyrosyluria was exhibited by 4 (13.3%) marasmus patients, and 16 (53.3%) patients had high I excretion. Ascorbic acid [50-81-7] (250 mg/day for 7 days) reduced II excretion but had no effect on I excretion. Thus, tyrosyluria in marasmus is probably due to reduced activity of hepatic p-hydroxyphenyl pyruvic acid **oxidase** (EC 1.13.11.27) [9029-72-5] due to the deficiency of ascorbate, and high excretion of I is probably related to age and nutrition of the child and unaffected by ascorbate administration. Urinary excretion of II is apparently a reliable index of tyrosyluria.
IT **156-38-7**
RL: PROC (Process)
(excretion of, in marasmus, tyrosyluria in relation to)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

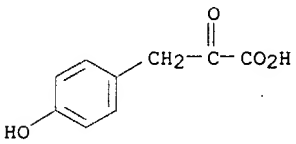


=> d bib abs hitstr 13

L35 ANSWER 13 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1977:580481 HCAPLUS
DN 87:180481
TI The catabolism of L-tyrosine by an **Arthrobacter** sp
AU Blakley, E. R.
CS Prairie Reg. Lab., Natl. Res. Counc. Canada, Saskatoon, Sask., Can.
SO Can. J. Microbiol. (1977), 23(9), 1128-39
CODEN: CJMIAZ
DT Journal
LA English
AB An **Arthrobacter** species metabolizes L-tyrosine by a pathway involving 3,4-dihydroxyphenylacetate as a key intermediate. P-**Hydroxyphenylpyruvate** is formed from tyrosine by an aminotransferase specifically requiring .alpha.-ketoglutarate for activity, and is then converted to p-hydroxyphenylacetate by an oxidative decarboxylation. P-Hydroxyphenylacetaldehyde is not an intermediate in the formation of p-hydroxyphenylacetate. Exts. of the **bacterium** oxidize 3,4-dihydroxyphenylacetate to .delta.-carboxymethyl-.alpha.-hydroxymuconic acid which, when supplemented with 2 mol. of NAD+, results in the prodn. of stoichiometric amts. of succinate and pyruvate.
IT **156-38-7 156-39-8**
RL: FORM (Formation, nonpreparative)
(formation of, from tyrosine, by **Arthrobacter**)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

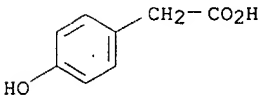


RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



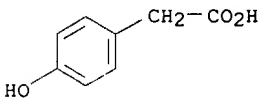
=> d bib abs hitstr 14

L35 ANSWER 14 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1974:447880 HCAPLUS
DN 81:47880
TI Metabolism of tritium-labeled tyrosine in the cerebrospinal fluid of cat. Role of transamination
AU Guldberg, Ann M. R.; Guldberg, H. C.
CS Med. Sch., Univ. Bergen, Bergen, Norway
SO Neuropharmacology (1973), 12(12), 1135-44
CODEN: NEPHBW
DT Journal
LA English
AB p-Hydroxyphenylacetic acid and p-hydroxyphenyllactic acid were detected in the cerebrospinal fluid (CSF) of cats after intracisternal administration of 3H-labeled L-tyrosine (I), possibly resulting from transamination of I through the p-**hydroxyphenylpyruvate** pathway. Pretreatment of cats with the monoamine **oxidase** inhibitor, pargyline, did not alter the CSF level of p-hydroxyphenylacetic acid.
IT **156-38-7**
RL: FORM (Formation, nonpreparative)
(formation of, as tyrosine metabolite in brain)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



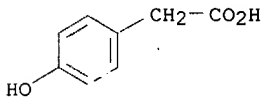
=> d bib abs hitstr 15

L35 ANSWER 15 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1972:472409 HCAPLUS
DN 77:72409
TI Microbial conversion of p-hydroxyphenylacetic acid to homogentisic acid
AU Blakley, E. R.
CS Prairie Reg. Lab., Natl. Res. Counc. Canada, Saskatoon, Sask., Can.
SO Can. J. Microbiol. (1972), 18(8), 1247-55
CODEN: CJMIAZ
DT Journal
LA English
AB An unidentified **bacterium** degrades p-hydroxyphenylacetic acid by a pathway which involves homogentisic acid as an intermediate. Exts. of cells grown on p-hydroxyphenylacetic acid contain an enzyme that converts p-hydroxyphenylacetic acid to homogentisic acid. The enzyme has been partially purified by (NH4)2SO4 fractionation and some of its properties examd. The complete oxidn. of 1 mole of p-hydroxyphenylacetic acid requires 1 mole of NADH or NADPH, and 1 mole of O, and results in the production of 1 mole of homogenetisic acid. The enzyme prepn. has a high specificity for p-hydroxyphenylacetic acid, but has about 25% activity with p-**hydroxyphenylpyruvic** acid.
IT **156-38-7**
RL: BIOL (Biological study)
(homogentisic acid formation from, by **bacteria**)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



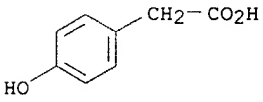
=> d bib abs hitstr 16

L35 ANSWER 16 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1972:12169 HCAPLUS
DN 76:12169
TI Metabolism of tyrosine to p-hydroxyphenylpropionic acid and to p-hydroxyphenylacetic acid by the hemolymph of the american cockroach
AU Mills, Richard R.; Lake, C. Raymond
CS Dep. Biol., Tulane Univ., New Orleans, La., USA
SO Insect Biochem. (1971), 1(3), 264-70
CODEN: ISBCAN
DT Journal
LA English
AB Labeled tyrosine-U-14C was metabolized through 2 different pathways: tyrosine .fwdarw. p-hydroxy-phenylpyruvic acid .fwdarw. p-hydroxyphenylacetic acid and tyrosine .fwdarw. p-**hydroxyphenylpyruvic** acid .fwdarw. p-hydroxyphenyl-lactic acid .fwdarw. p-hydroxyphenylpropionic acid. These reactions took place in vitro using partially purified enzymes from whole hemolymph. The purification procedure involved column chromatog. on Sepharose 6B which effectively eliminated tyrosinase-**phenoloxidase** participation via removal of necessary cofactors and (or) activators. Tyrosine decarboxylase is in competition for the substrate since pyridoxal phosphate is an essential cofactor for both this enzyme and the synthesis of the 4 acids. Subsequent .beta.-hydroxylation of tyramine can be inhibited by the deletion of ascorbic acid from the reaction mixt. The synthesis of the acids can be obtained by using hemolymph from newly ecdysed larvae, intraecdysal larvae, and adult female cockroaches. Thus the enzyme system is present throughout the life of the insect and the synthesis is not switched off during ecdysis as it is in blowflies.
IT **156-38-7**
RL: FORM (Formation, nonpreparative)
(formation of, from tyrosine by cockroach hemolymph)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

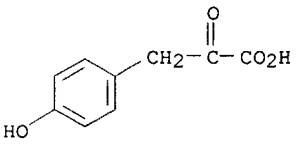


=> d bib abs hitstr 17

L35 ANSWER 17 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1970:130358 HCAPLUS
DN 72:130358
TI Metabolism of phenolic compounds in hepatic diseases with encephalopathic effects
AU Ruge, W.; Otto, P.
CS Med. Klin., Hannover, Ger.
SO Verh. Deut. Ges. Inn. Med. (1969), 75, 329-32
CODEN: VDGIA2
DT Journal
LA German
AB In 20 patients with hepatic insufficiency, of which 15 showed encephalopathic symptoms, the following parameters were measured: serum tyrosine, serum and urine free phenol, and serum phenolic compds. (neutral phenols, phenolic amines, and phenolic acids). The phenolic acids were sepd. by gas chromatog. after Me ester formation. p-Hydroxyphenylacetic acid and p-**hydroxyphenylpyruvic** acid are significantly increased in the comatosed state, esp. after massive protein loading as produced in massive esophageal or gastric bleeding varices. In liver insufficiency a pos. correlation existed between p-hydroxyphenyl acids and free phenol, tyrosine, and ammonia N in serum. A neg. correlation existed in the Hb content of the blood. The m-hydroxyphenyl acids in the urine arose in great part from the action of **bacterial** enzymes in the gut on catechol amines. When patients received oral antibiotics these were greatly reduced in the urine.
IT **156-38-7 156-39-8**
RL: BIOL (Biological study)
(of blood serum, in hepatic coma)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

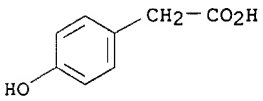


RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



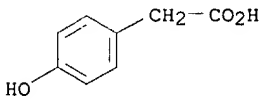
=> d bib abs hitstr 18

L35 ANSWER 18 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1970:19718 HCAPLUS
DN 72:19718
TI Degradation of tyrosine by rat cecal contents
AU Bakke, Olav M.
CS Dep. Pharmacol., Univ. Bergen, Bergen, Norway
SO Scand. J. Gastroenterol. (1969), 4(7), 603-8
CODEN: SJGRA4
DT Journal
LA English
AB p-Cresol and phenol were the only simple phenols produced from tyrosine during anaerobic incubation with rat cecal contents, and the addn. of neomycin sulphate nearly abolished their formation. 4-Hydroxyphenylacetic acid and phloretic acid were the only phenolic acids detected. The former compd. was decarboxylated to p-cresol while phloretic acid did not yield simple phenols. Because of extensive decarboxylation of 4-hydroxybenzoic acid the failure to detect this compd. does not exclude it as an immediate precursor of p henol in the incubates with tyrosine added. 4-**Hydroxyphenylpyruvic** acid and p-coumaric acid were not detected in these incubates, and there was no evidence of microbial metabolism of 4-ethylphenol and p-cresol.
IT **156-38-7**
RL: FORM (Formation, nonpreparative)
(formation of, from tyrosine by cecal contents)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



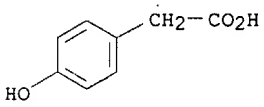
=> d bib abs hitstr 19

L35 ANSWER 19 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1969:54884 HCAPLUS
DN 70:54884
TI Biosynthesis and metabolism of hydroxyphenylacetic acids in higher plants
AU Kindl, Helmut
CS Univ. Wien, Vienna, Austria
SO Eur. J. Biochem. (1969), 7(3), 340-7
CODEN: EJBCAI
DT Journal
LA English
AB 2-Hydroxyphenylacetic acid, a natural phenolic product found in the genus Astilbe, comes from the shikimic acid pathway via phenylpyruvic acid. The existence of 2 routes for the biosynthesis of 2-hydroxyphenylacetic acid could be demonstrated. A direct transformation of phenylpyruvic acid into 2-hydroxyphenylacetic acid occurred involving a migration of the side chain. More than 95% of the T activity of 2-hydroxyphenylacetic acid was localized in position 5 when L-phenylalanine-4-3H was fed. This complex oxidn. is analogous to the known conversion of 4-**hydroxyphenylpyruvic** acid to homogentisic acid. A hydroxylation of phenylacetic-4-3H acid to 2-hydroxyphenylacetic-4-3H acid was observed in vivo, and was also found to take place in vitro, utilizing the system **peroxidase**-enediol-O2. 2,3-Dihydroxy-phenylacetic acid and 2-hydroxy-3-methoxyphenylacetic acid could be established as natural products occurring in higher plants. Their chem. synthesis is described. By feeding expts. the following metabolic pathway is suggested: 2-hydroxyphenylacetic acid .fwdarw. 2,3-dihydroxyphenylacetic acid .fwdarw. 2-hydroxy-3-methoxyphenylacetic acid. 3,4-Dihydroxyphenylacetic acid and 3-methoxy-4-hydroxyphenylacetic acid were detected in exts. from various species of Astilbe and identified by paper chromatog. These 2 acids are metabolic products of 4-hydroxyphenylacetic acid. Expts. with shikimic-U-14C acid and DL-phenylalanine-.alpha.-14C seem to indicate that the regulation of the biosynthesis of 2-hydroxyphenylacetic acid and 4-hydroxyphenylacetic acid takes place on the level of prephenic acid. Preliminary results were obtained consistent with the hypothesis that in A. chinensis the 2,3-dihydroxyphenylacetic acid, 3,4-dihydroxyphenylacetic acid, and 2,5-dihydroxyphenylacetic acid are further metabolized and can be degraded by ring cleavage.
IT **156-38-7**
RL: FORM (Formation, nonpreparative)
(formation of, pathway in Astilbe chinensis for)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)

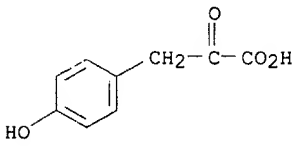


=> d bib abs hitstr 20

L35 ANSWER 20 OF 20 HCAPLUS COPYRIGHT 2001 ACS
AN 1968:11093 HCAPLUS
DN 68:11093
TI Investigation in vivo of the biochemical defect in hereditary tyrosinemia and tyrosyluria
AU Scriver, Charles R.; Davies, Eluned
SO Can. Med. Assoc. J. (1967), 97(18), 1076-8
CODEN: CMAJAX
DT Journal
LA English
AB The nature of tyrosyluria (urinary excretion of Millon-pos. derivs., viz., p-**hydroxyphenylpyruvate** (p-HPPA), p-hydroxyphenyllactate (pHPLA), p-hydroxyphenylacetate (pHPAA), and tyrosine) was studied. Restriction of dietary tyrosine suppressed urinary excretion of these compds. Investigation of the reversible inhibition of the enzyme pHPPA **oxidase** by consecutive administration of ascorbic acid, 500 mg. daily for 3 days, folic acid, 5 mg. twice daily i.m. for 3 days, and hydrocortisone, 50 mg. twice daily i.m. for 3 days, showed no effect on tyrosyluria or tyrosinemia. With tyrosine loading (0.25 millimole/kg. before treatment), the augmented serum tyrosine was always accompanied by increased tyrosyluria which exceeded the preload excretion. With tyrosine load after 6 months on dietary therapy, the results were the same as before except that plasma tyrosine was normal and the degree of tyrosinemia was much less. With oral neomycin (500 mg. twice daily for 4 days), there was partial suppression of the augmented tyrosyluria. With pHPPA loading (0.25 millimole/kg. before treatment), augmented serum tyrosine and tyrosyluria occurred. With L-phenylalanine (0.60 millimole/kg. after 6 months on treatment), plasma tyrosine rose abnormally, and heavy tyrosyluria appeared in the 1st 6 hrs. Restriction of phenylalanine and tyrosine to 25% of the normal daily intake eliminated serum tyrosine and tyrosyluria; introduction of tyrosine resulted in immediate reappearance of tyrosyluria, and serum tyrosine reappeared the next day.
IT **156-38-7 156-39-8**
RL: BIOL (Biological study)
(in urine in tyrosinemia and tyrosyluria)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



RN 156-39-8 HCAPLUS
CN Benzenepropanoic acid, 4-hydroxy-.alpha.-oxo- (9CI) (CA INDEX NAME)



=> d bib abs hitstr 1

L41 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2001 ACS
AN 1997:130949 HCAPLUS
DN 126:248440
TI Spectrophotometric determination of homogentisate using Aspergillus nidulans homogentisate dioxygenase
AU Fernandez-Canon, Jose M.; Penalva, Miguel A.
CS Dep. Microbiologia Molecular, Centro Investigaciones Biologicas CSIC, Madrid, 28006, Spain
SO Anal. Biochem. (1997), 245(2), 218-221
CODEN: ANBCA2; ISSN: 0003-2697
PB Academic
DT Journal
LA English
AB The presence of homogentisic acid (HGA) in urine is diagnostic for alkaptonuria, a classical example of a biochem. lesion resulting from a single gene trait. We describe here simple culture conditions which induce the synthesis of high levels of homogentisate dioxygenase activity in mycelia from the filamentous ascomycete Aspergillus nidulans. Crude enzyme prepns., showing an apparent Km of 9 .mu.M for homogentisate and an optimal pH of 6.5-7.0 are rather stable and highly specific for homogentisate. Thus, the reaction is not competed by a large molar excess of a no. of substrate structural analogs, including phenylacetate and its 2-, 3-, and 4-hydroxy derivs., phenylalanine, tyrosine, phenylpyruvate, and gentisate. We demonstrate how this enzyme prepn. can be used in sensitive, spectrophotometric enzymic detn. of this compd. The accuracy is almost indistinguishable from that obtained by HPLC. The method can be applied to routine detn. of homogentisate in human urine. A 1-L culture of the mold provides sufficient enzyme activity for 1500 enzymic assays.

=> d ind

L41 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2001 ACS
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 7, 10, 14
ST spectrophotometry homogentisate Aspergillus nidulan dioxygenase
IT Metabolic diseases
(alkaptonuria; spectrophotometric detn. of homogentisate using Aspergillus nidulans homogentisate dioxygenase)
IT Aspergillus nidulans
Mold (fungus)
Urine analysis
(spectrophotometric detn. of homogentisate using Aspergillus nidulans homogentisate dioxygenase)
IT 451-13-8, Homogentisic acid
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(spectrophotometric detn. of homogentisate using Aspergillus nidulans homogentisate dioxygenase)
IT 9029-49-6P, **Homogentisate** dioxygenase
RL: ARG (Analytical reagent use); **BPN (Biosynthetic preparation)**; ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(spectrophotometric detn. of **homogentisate** using Aspergillus nidulans **homogentisate** dioxygenase)
IT 60-18-4, Tyrosine, analysis 63-91-2, Phenylalanine, analysis 122-79-2, Phenylacetate 156-06-9 490-79-9 621-37-4 2848-25-1, 2-Hydroxyphenylacetate 3233-32-7, 4-Hydroxyphenylacetate
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(spectrophotometric detn. of homogentisate using Aspergillus nidulans homogentisate dioxygenase)

=> d bib abs hitstr 2

L41 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2001 ACS
AN 1995:796623 HCAPLUS
DN 123:333642
TI Molecular characterization of a gene encoding a homogentisate dioxygenase from Aspergillus nidulans and identification of its human and plant homologs
AU Fernandez-Canon, Jose M.; Penalva, Miguel A.
CS Dep. Micribiol. Mol., CSIC, Madrid, 28006, Spain
SO J. Biol. Chem. (1995), 270(36), 21199-205
CODEN: JBCHA3; ISSN: 0021-9258
DT Journal
LA English
AB The authors report here the first characterization of a gene encoding a homogentisate dioxygenase, the Aspergillus nidulans hmgA gene. The HmgA protein catalyzes an essential step in phenylalanine catabolism, and disruption of the gene results in accumulation of homogentisate in broths contg. phenylalanine. HmgA putatively encodes a 448-residue polypeptide (Mr = 50,168) contg. 21 histidine and 23 tyrosine residues. This polypeptide has been expressed in Escherichia coli as a fusion to glutathione S-transferase, and the affinity-purified protein has homogentisate dioxygenase activity. A. nidulans, an ascomycete amenable to classical and reverse genetic anal., is a good metabolic model to study inborn errors in human Phe catabolism. One such disease, alkaptonuria, was the first human inborn error recognized (Garrod, A. E. (1902) Lancet 2, 1616-1620) and results from loss of homogentisate dioxygenase. Here the authors take advantage of the high degree of conservation between the amino acid sequences of the fungal and higher eukaryote enzymes of this pathway to identify expressed sequence tags encoding human and plant homologues of HmgA. This is a significant advance in characterizing the genetic defect(s) of alkaptonuria and illustrates the usefulness of this fungal model.

=> d ind 2

L41 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2001 ACS
CC 7-5 (Enzymes)
Section cross-reference(s): 3, 10, 14
ST Aspergillus gene hmgA homogentisate dioxygenase sequence; human phenylalanine catabolism model system Aspergillus; alkaptonuria phenylalanine catabolism model system Aspergillus; expressed sequence tag human plant alkaptonuria
IT Transcription, genetic
(PhAc and Phe induced; mol. characterization of gene encoding homogentisate dioxygenase from Aspergillus nidulans and identification of its human and plant homologs)
IT Genetic element
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(expressed sequence-tag (EST), identification of human and plant HmgA; mol. characterization of gene encoding homogentisate dioxygenase from Aspergillus nidulans and identification of its human and plant homologs)
IT Escherichia coli
(expression and purifn. in; mol. characterization of gene encoding homogentisate dioxygenase from Aspergillus nidulans and identification of its human and plant homologs)
IT Gene, plant
RL: PRP (Properties)
(hmgA; mol. characterization of gene encoding homogentisate dioxygenase from Aspergillus nidulans and identification of its human and plant homologs)
IT Aspergillus nidulans
Deoxyribonucleic acid sequences
Protein sequences
(mol. characterization of gene encoding homogentisate dioxygenase from Aspergillus nidulans and identification of its human and plant

homologs)

IT Alkaptonuria
(significant advance in characterizing the genetic defect(s) of; mol. characterization of gene encoding homogentisate dioxygenase from Aspergillus nidulans and identification of its human and plant homologs)

IT 170561-26-9P
RL: **BPN (Biosynthetic preparation)**; PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(amino acid sequence; mol. characterization of gene encoding **homogentisate** dioxygenase from Aspergillus nidulans and identification of its human and plant homologs)

IT 63-91-2, Phenylalanine, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(catabolism, Aspergillus nidulans as system to study errors in human; mol. characterization of gene encoding homogentisate dioxygenase from Aspergillus nidulans and identification of its human and plant homologs)

IT 9029-49-6, Homogentisate dioxygenase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(mol. characterization of gene encoding homogentisate dioxygenase from Aspergillus nidulans and identification of its human and plant homologs)

IT 168857-03-2P, Genbank U30797
RL: **BPN (Biosynthetic preparation)**; PRP (Properties); BIOL (Biological study); PREP (Preparation)
(nucleotide sequence; mol. characterization of gene encoding **homogentisate** dioxygenase from Aspergillus nidulans and identification of its human and plant homologs)

=> d bib abs hitstr 1

L42 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2001 ACS
AN 2001:332143 HCAPLUS
DN 134:321593
TI Protein and cDNA sequences of a human proteasome subunit .alpha. sequence homolog (hPas) and uses thereof
IN Li, Nenggan; Xiao, Huasheng; Kang, Baiyu; Song, Huaidong; Chen, Zhu; Han, Zheguang
PA South China Research Center, National Human Gene Group, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 20 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1271006	A	20001025	CN 2000-114949	20000317

AB The invention provides protein and cDNA sequences of a novel human proteasome subunit .alpha. (hPas) which is a sequence homolog of Sulfolobus solfataricus Pas gene. The invention also relates to constructing hPas gene expression vectors to prep. recombinant hPas using E.coli cells or eukaryotic cells. The invention further relates to the uses of hPas. Methods of prepg. antibodies of recombinant human hPas are also described.

=> d bib abs hitstr 2

L42 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2001 ACS
AN 2001:320060 HCAPLUS
DN 134:339179
TI Nucleic acids and proteins associated with cancer as antitumor targets
IN Burmer, Glenna C.; Brown, Joseph P.; Pritchard, David
PA Lifespan Biosciences, Inc., USA
SO PCT Int. Appl., 98 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

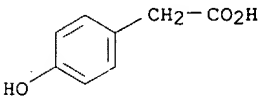
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001030964	A2	20010503	WO 2000-US29126	20001020

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-161232 P 19991022
AB This invention relates to the discovery of nucleic acids assocd. with cell proliferation, neoplasia, cell transformation, malignant tumor formation and metastasis and uses therefor. The present invention provides a method for cancer diagnosing by detecting the overexpression or the underexpression of a cancer-assocd. mRNA in the tissue of interest, preferably in liver, breast, prostate, kidney and colon. In another aspect, the invention provides methods for arresting cancer and a method for identifying a modulators of cancer development.

=> d bib abs hitstr 3

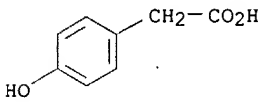
L42 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2001 ACS
AN 2001:8060 HCAPLUS
DN 134:307022
TI Antibody-catalyzed hydrolysis of oligomeric esters: a model for the degradation of polymeric materials
AU Brummer, Oliver; Hoffman, Timothy Z.; Chen, Da-Wei; Janda, Kim D.
CS Department of Chemistry, The Scripps Research Institute and The Skaggs Institute for Chemical Biology, La Jolla, CA, 92037, USA
SO Chem. Commun. (Cambridge) (2001), (1), 19-20
CODEN: CHCOFS; ISSN: 1359-7345
PB Royal Society of Chemistry
DT Journal
LA English
AB A catalytic antibody has been discovered that degrades oligomeric ester substrates. All the observations and data confirmed that the antibody performed oligomer degrdns. by 'multimer' processing using nonregioselective, kinetically biased endo-cleavage, rather than a stepwise deoligomerization through cleavage of monomers from a terminus. These findings are of fundamental importance as now catalytic antibodies share another trait thought only to be assocd. with enzymes, the biodegrdn. of oligo and polymeric materials.
IT **156-38-7P**, 4-Hydroxyphenylacetic acid
RL: **BPN (Biosynthetic preparation)**; RCT (Reactant); BIOL (Biological study); PREP (Preparation)
(discovery of catalytic antibody capable of degrading oligomeric ester substrates)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



RE.CNT 14
RE
(1) Albertsson, A; Acta Polym 1995, V46, P114 HCAPLUS
(2) Brummer, O; Tetrahedron Lett 1999, V40, P7307 HCAPLUS
(3) Copeland, R; Bioorg Med Chem Lett 1995, V5, P1947 HCAPLUS
(5) Janda, K; Comprehensive Supramolecular Chemistry 1996, V4, P43 HCAPLUS
(6) Jesudason, J; J Environ Polym Degrad 1993, V1, P89 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs hitstr 4

L42 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2001 ACS
AN 2000:375847 HCAPLUS
DN 133:278482
TI Phytotoxins produced by Sclerotium fumigatum Nakata
AU Adachi, Takuo; Inagaki, Kimiharu; Yamada, Tetsuya
CS Research Laboratory of Natural Organic Chemistry, Meijo University, Japan
SO Meijo Daigaku Nogakubu Gakujutsu Hokoku (2000), 36, 33-37
CODEN: MDNGBZ; ISSN: 0910-3376
PB Meijo Daigaku Nogakubu
DT Journal
LA Japanese
AB The methylate of phytotoxins produced by Sclerotium futmigatum Nakata was sepd. by GC-MS with DB-1 capillary column (30 m x 0.253 mm i.d.; 0.25 .mu.m film thickness). Four peaks were identified by mass spectra of electron-impact ionization. Consequently, p-hydroxybenzoic acid, phenylacetic acid, o-hydroxyphenyl acetic acid and p-hydroxyphenylacetic acid were identified as the phytotoxins. These arom. acids were newly identified as phytotoxins produced by S. funzigatum.
IT **156-38-7P**, p-Hydroxyphenylacetic acid
RL: **BPN (Biosynthetic preparation)**; BIOL (Biological study);
PREP (Preparation)
(phytotoxins produced by Sclerotium fumigatum Nakata)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



=> d bib abs hitstr 5

L42 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:723147 HCAPLUS
DN 131:332967
TI Genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same
IN Ben-Artzi, Hanna; Ayal-Hershkovitz, Maty; Yacoby-Zeevi, Oron; Pecker, Iris; Peleg, Yoav; Shlomi, Yinon
PA Insight Strategy & Marketing Ltd., Israel; Friedman, Mark, M.
SO PCT Int. Appl., 118 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9957244	A1	19991111	WO 1999-US9256	19990429
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9937705	A1	19991123	AU 1999-37705	19990429
	EP 1076689	A1	20010221	EP 1999-920135	19990429
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	NO 2000005100	A	20001228	NO 2000-5100	20001010
PRAI	US 1998-71618	A	19980501		
	US 1999-260038	A	19990302		
	WO 1999-US9256	W	19990429		

AB Bacterial, yeast and animal cells and methods for overexpressing recombinant heparanase in cellular systems, methods of purifying recombinant heparanase therefrom and modified heparanase species which serve as precursors for generating highly active heparanase by proteolysis. Heparanase is a glycosylated enzyme involved in catabolism of certain glycosaminoglycans, in tumor cell invasion and metastasis, and possibly in angiogenesis. It has potential therapeutic applications for viral infection, neurodegenerative diseases, restenosis, and atherosclerosis. A signal peptide was incorporated for effective protein secretion in yeast and bacteria and insect and mammalian cells. Protein secretion is achieved by induction by thrombin and calcium ionophores and immune complexes and antigens and mitogens. This work describes prodn. of heparanase on a biotechnol. scale of at least half a liter growth medium by affinity purifn. This large scale propagation of animal cells is described in a Spinner-basket bioreactor. The heparanase enzyme is activated by digestion with a protease such as cathepsin L or trypsin at appropriate pH. A correctly folded catalytically active heparanase is generated.
RE.CNT 2
RE
(1) Insight Strategy & Marketing Ltd; WO 9911798 A1 1999 HCAPLUS
(2) The Upjohn Co; WO 9504158 A1 1995 HCAPLUS

=> d ind 5

L42 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2001 ACS
IC ICM C12N001-21
ICS C12N001-15; C12N001-19; C12N005-10; C12N009-24; C12N015-09; C12N015-56; C12N015-63
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 7, 14
ST secretion heparanase human sequence cDNA purifn engineering; affinity chromatog heparanase human secretion engineering purifn

IT Animal cell line
(293, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(3T3, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(BHK-21, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(CHO, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(COS, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(Daudi, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(Ehrlich ascites, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Insect (Insecta)
(High five and SF21; good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(L-929, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(MDCK, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(Mamalwa cells and BLG cells; good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(Namalwa, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(Raji, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(SK-hep-1, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell line
(Vero, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT pH
(activation of heparanase enzyme by digestion with protease at appropriate pH; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Protein degradation
(applications for; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Protein folding
(generation of correctly folded heparanase; genetically modified cells and methods for expressing recombinant heparanase and methods of

purifying same)
IT Genetic engineering
Genetic vectors
Protein sequences
cDNA sequences
(genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell
Bacteria (Eubacteria)
Escherichia coli
HeLa cell
Komagataella pastoris
Pichia angusta
Saccharomyces cerevisiae
Yeast
(good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Ion exchange liquid chromatography
(heparanase purifn. using Source-S column; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Antibodies
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(heparanase-specific; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Gene, microbial
RL: **BPN (Biosynthetic preparation)**; IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**hpa**; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Antibodies
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(immobilized; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Signal peptides
RL: BPN (Biosynthetic preparation); BUU (Biological use, unclassified); BIOL (Biological study); PREP (Preparation); USES (Uses)
(incorporation of signal peptide for protein secretion; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Recombination, genetic
(integration, stable transduction by integration; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Mitogens
(ionophore; protein secretion induction by use of; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Antigens
Immune complexes
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)
(ionophore; protein secretion induction by use of; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Animal cell
(mammalian, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Yeast
(methylotrophic, good host expression system; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT Secretion (process)
(protein; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)
IT DNA

RL: BPN (Biosynthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(recombinant; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT Transduction, genetic
(stable transduction by integration; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT Bioreactors
(utilization of Spinner-basket bioreactor; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT 9001-92-7, Protease 37259-58-8, Serine protease 37353-41-6, Cysteine protease 78169-47-8, Aspartyl protease 81669-70-7, Metalloproteinase
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(activation of heparanase enzyme by digestion with protease; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT 37205-61-1, Protease inhibitor
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(administration of inhibitor to stop processing of heparanase; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT 221113-49-1P, Heparanase (human gene **hpa**)
RL: **BPN (Biosynthetic preparation)**; IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT 89800-66-8P, Heparanase
RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT 7440-70-2, Calcium, biological studies 16561-29-8, Phorbol 12-myristate 13-acetate 52665-69-7, Calcimycin
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)
(ionophore; protein secretion induction by use of; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT 221113-46-8P
RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(nucleotide sequence; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT 9002-04-4, Thrombin
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)
(protein secretion induction by use of; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT 9002-07-7, Trypsin 60616-82-2, Cathepsin L
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(proteolytic processing of heparanase by trypsin and cathepsin L; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT 249925-81-3, PN: WO9957244 SEQID: 4 unclaimed DNA 249925-83-5, PN: WO9957244 SEQID: 5 unclaimed DNA 249925-84-6, PN: WO9957244 SEQID: 6 unclaimed DNA 249925-85-7, PN: WO9957244 SEQID: 7 unclaimed DNA 249925-86-8, PN: WO9957244 SEQID: 8 unclaimed DNA 249925-87-9, PN: WO9957244 SEQID: 9 unclaimed DNA 249925-88-0, PN: WO9957244 SEQID: 10 unclaimed DNA 249925-89-1, PN: WO9957244 SEQID: 11 unclaimed DNA

249925-90-4, PN: WO9957244 SEQID: 12 unclaimed DNA 249925-91-5, PN: WO9957244 SEQID: 15 unclaimed DNA 249925-92-6, PN: WO9957244 SEQID: 16 unclaimed DNA 249925-93-7, PN: WO9957244 SEQID: 17 unclaimed DNA 249925-94-8, PN: WO9957244 SEQID: 18 unclaimed DNA 249925-95-9, PN: WO9957244 SEQID: 19 unclaimed DNA 249925-96-0, PN: WO9957244 SEQID: 20 unclaimed DNA 249925-98-2, PN: WO9957244 SEQID: 21 unclaimed DNA 249925-99-3, PN: WO9957244 SEQID: 22 unclaimed DNA 249926-01-0, PN: WO9957244 SEQID: 23 unclaimed DNA 249926-02-1, PN: WO9957244 SEQID: 24 unclaimed DNA
RL: PRP (Properties)
(unclaimed nucleotide sequence; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

IT 54017-28-6 91859-00-6 249744-02-3
RL: PRP (Properties)
(unclaimed sequence; genetically modified cells and methods for expressing recombinant heparanase and methods of purifying same)

=> d bib abs hitstr 6

L42 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2001 ACS
AN 1999:492740 HCAPLUS
DN 132:48655
TI Rapid phenotyping of HPA-1a using either diabody-based hemagglutination or recombinant IgG1-based assays
AU Watkins, N. A.; Armour, K. L.; Smethurst, P. A.; Metcalfe, P.; Scott, M. L.; Hughes, D. L.; Smith, G. A.; Williamson, L. M.; Clark, M. R.; Ouwehand, W. H.
CS Division of Transfusion Medicine, Department of Haematology, and the Division of Immunology, Department of Pathology, University of Cambridge, Cambridge, CB2 2PT, UK
SO Transfusion (Bethesda, Md.) (1999), 39(7), 781-789
CODEN: TRANAT; ISSN: 0041-1132
PB American Association of Blood Banks
DT Journal
LA English
AB The HPA-1 system is carried on the .beta.3 integrin. HPA-1a (Zwa, PlA1) is immunogenic in an HPA-1b homozygote (HPA-1b1b). In pregnancy, 1 of 365 women forms anti-HPA-1a, which causes severe thrombocytopenia in 1 in 1100 neonates. Identification of women at risk of forming anti-HPA-1a and the screening of donors to obtain HPA-1a-neg. platelets for therapy need reliable, low-cost, automated assays. A diabody with dual specificity for HPA-1a .times. D and and IgG1 anti-HPA-1a have been constructed by the use of the genes encoding the first anti-HPA-1a fragment. With these reagents, two complementary HPA-1a phenotyping assays have been developed. This diabody was used in a simple hemagglutination technique to perform HPA-1a phenotyping on sol. glycoprotein IIb/IIIa from EDTA plasma samples. Over 1000 unselected donors have been correctly HPA-1a-phenotyped by use of the diabody. The human recombinant IgG1 anti-HPA-1a was produced in a rat myeloma cell line and was fluorescein labeled for use in a whole-blood flow cytometric HPA-1a phenotyping assay. This IgG1 anti-HPA-1a shows a clear differential between HPA-1a-pos. and HPA-1a-neg. platelets at nM antibody concns. The two recombinant reagents described are highly suitable for screening and confirmatory HPA-1a phenotyping. They permit rapid detn. of the HPA-1a phenotype and are amenable to automation.
RE.CNT 33
RE
(2) Bessos, H; Br J Haematol 1996, V92, P221 HCAPLUS
(3) Brennan, M; Science 1985, V229, P81 HCAPLUS
(4) Bye, J; J Clin Invest 1992, V90, P2481 HCAPLUS
(8) Griffin, H; Blood 1995, V86, P4430 HCAPLUS
(9) Holliger, P; Proc Natl Acad Sci USA 1993, V90, P6444 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> d bib abs hitstr 7

L42  ANSWER 7 OF 8  HCAPLUS  COPYRIGHT 2001 ACS
AN   1999:405072  HCAPLUS
DN   131:40593
TI   Human phosphatase homologs and cDNAs and methods for treatment of cancer
     and immune disorders
IN   Shah, Purvi; Hillman, Jennifer L.; Corley, Neil C.; Lal, Preeti
PA   Incyte Pharmaceuticals, Inc., USA
SO   PCT Int. Appl., 80 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
PI   WO 9931225         A2   19990624       WO 1998-US25559  19981202
     WO 9931225         A3   19991014
          W:  AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
              DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG,
              KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,
              NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
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              CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     US 6242179         B1   20010605       US 1997-992035   19971217
     AU 9915414         A1   19990705       AU 1999-15414    19981202
     EP 1037967         A2   20000927       EP 1998-959660   19981202
          R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
              IE, FI
PRAI US 1997-992035     A2   19971217
     WO 1998-US25559    W    19981202
AB   The invention provides human phosphatases (HPA) and polynucleotides which
     identify and encode HPA.  The invention also provides expression vectors,
     host cells, antibodies, agonists, and antagonists.  The invention also
     provides methods for treating disorders assocd. with expression of HPA.


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L42  ANSWER 7 OF 8  HCAPLUS  COPYRIGHT 2001 ACS
IC   ICM  C12N009-00
CC   3-3 (Biochemical Genetics)
     Section cross-reference(s): 1, 7, 13
ST   sequence human phosphatase homolog cDNA; cancer immune disorder treatment
     human phosphatase homolog antagonist
IT   Proteins, specific or class
     RL: BPN (Biosynthetic preparation); BUU (Biological use,
     unclassified); PRP (Properties); BIOL (Biological study); PREP
     (Preparation); USES (Uses)
        (HPA-2, phosphatase sequence homolog; human phosphatase
        homologs and cDNAs and methods for treatment of cancer and immune
        disorders)
IT   Immunity
        (disorder; human phosphatase homologs and cDNAs and methods for
        treatment of cancer and immune disorders)
IT   Nucleic acid hybridization
        (for detection of phosphatase homolog nucleic acids; human phosphatase
        homologs and cDNAs and methods for treatment of cancer and immune
        disorders)
IT   cDNA sequences
        (for human phosphatase homologs HPA-1 and HPA-2)
IT   Antitumor agents
        (human phosphatase homologs and cDNAs and methods for treatment of
        cancer and immune disorders)
IT   Protein sequences
        (of human phosphatase homologs HPA-1 and HPA-2)
IT   Molecular cloning
```

(of phosphatase homolog cDNAs; human phosphatase homologs and cDNAs and methods for treatment of cancer and immune disorders)

IT Antibodies
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(to phosphatase homologs; human phosphatase homologs and cDNAs and methods for treatment of cancer and immune disorders)

IT 227298-58-0P 227298-60-4P
RL: BPN (Biosynthetic preparation); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; human phosphatase homologs and cDNAs and methods for treatment of cancer and immune disorders)

IT 9013-05-2DP, Phosphatase, sequence homologs
RL: BPN (Biosynthetic preparation); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses)
(human phosphatase homologs and cDNAs and methods for treatment of cancer and immune disorders)

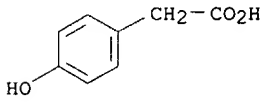
IT 227298-59-1P 227298-61-5P
RL: BPN (Biosynthetic preparation); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses)
(nucleotide sequence; human phosphatase homologs and cDNAs and methods for treatment of cancer and immune disorders)

=> d bib abs hitstr 8

L42 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2001 ACS
AN 1995:833473 HCAPLUS
DN 123:226044
TI Oxidation method for side chains of aromatic compounds and Ustilago species used in the process
IN Myaji, Shinya; Watanabe, Kikuo; Tanaka, Tooru; Suzuki, Takaya; Hotsuta, Yasushi
PA Petroleum Energy Center Found, Japan; Cosmo Oil Co Ltd
SO Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 07184669	A2	19950725	JP 1993-332340	19931227

AB Side chains of arom. compds. are oxidized with Ustilago sp. Ustilago sp. CRP-12 (FERM P-1420) was shake-cultured in a medium contg. salts, n-hexadecane, and 2,6-dimethylnaphthalene at 30.degree. for 7 days to manuf. 2,6-naphthalenedicarboxylic acid.
IT **156-38-7P**, p-Hydroxyphenylacetic acid
RL: BMF (Bioindustrial manufacture); **BPN (Biosynthetic preparation)**; BIOL (Biological study); PREP (Preparation)
(manuf. of carboxylic acids by oxidn. of side chains of arom. compds. with Ustilago)
RN 156-38-7 HCAPLUS
CN Benzeneacetic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



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L49 ANSWER 1 OF 1 CASREACT COPYRIGHT 2001 ACS
AN 131:350339 CASREACT
TI Process for enzymic preparation of homogentisate
IN Sailland, Alain; Derose, Richard
PA Rhone Poulenc Agrochimie, Fr.
SO Fr. Demande, 11 pp.
CODEN: FRXXBL
DT Patent
LA French
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2772789	A1	19990625	FR 1997-16727	19971224
	FR 2772789	B1	20001124		
	WO 9934008	A1	19990708	WO 1998-FR2819	19981222

W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

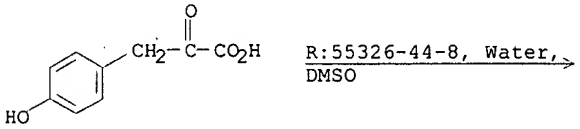
	AU 9918808	A1	19990719	AU 1999-18808	19981222
	EP 1042496	A1	20001011	EP 1998-963586	19981222

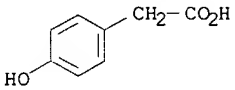
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI

PRAI FR 1997-16727 19971224
WO 1998-FR2819 19981222

AB A procedure for producing homogentisate from 4-hydroxyphenylpyruvate is disclosed, characterized in that it consists of sequential enzymic reactions: conversion of 4-hydroxyphenylpyruvate to 4-hydroxyphenylacetate by an appropriate enzyme, followed by conversion of 4-hydroxyphenylacetate to homogentisate by a 2nd enzyme.

RX(1) OF 3





REF: Fr. Demande, 2772789, 25 Jun 1999
NOTE: biotransformation, enzymic, oxidase from Arthrobacter globiformis

OF 1 CASREACT COPYRIGHT 2001 ACS

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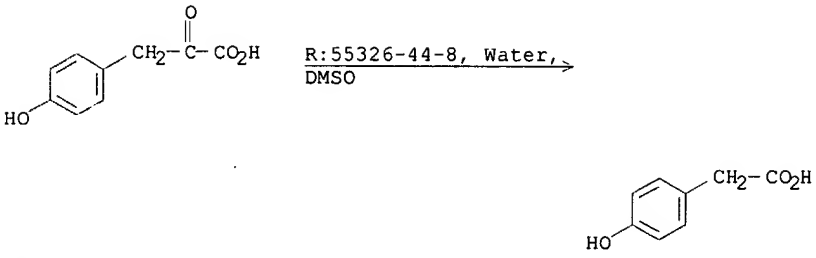
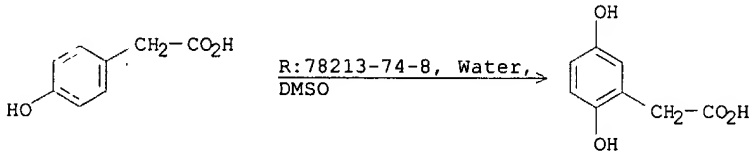
L49 ANSWER 1 OF 1 CASREACT COPYRIGHT 2001 ACS

RX(1) OF 3



REF: Fr. Demande, 2772789, 25 Jun 1999
NOTE: biotransformation, enzymic, oxidase from Arthrobacter globiformis

RX(2) OF 3

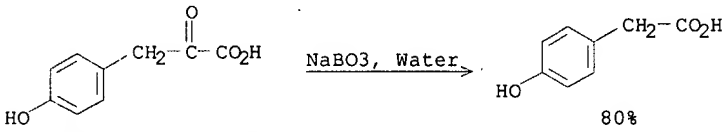


REF: Fr. Demande, 11 pp.; 1999
NOTE: biotransformation, enzymic, dioxygenase from Pseudomonas acidovorans

=> d bib abs fcrdref

L50 ANSWER 1 OF 1 CASREACT COPYRIGHT 2001 ACS
AN 129:230670 CASREACT
TI Oxidative decarbonylation of .beta.-arylpyruvic acids using sodium perborate
AU Morrow, Nicholas; Ramsden, Christopher A.; Sargent, Bruce J.; Wallett, Christiaan D.
CS Dep. Chem., Keele Univ., Keele, ST5 5BG, UK
SO Tetrahedron (1998), 54(33), 9603-9612
CODEN: TETRAB; ISSN: 0040-4020
PB Elsevier Science Ltd.
DT Journal
LA English
AB Oxidn. of .beta.-arylpyruvic acids and .beta.-heteroarylpyruvic acids using sodium perborate tetrahydrate (SPB) in aq. soln. at ambient temp. gives the corresponding arylacetic acids in good yield (68-86%). The mild conditions are convenient for the prepn. of thermally unstable acids. In particular the method was applied to the prepn. of an unstable 5-nitro-1H-imidazole-2-acetic acid which could not be obtained using other reagents apparently due to enolization of the pyruvic acid precursor. Attempts to achieve decarbonylation using calcium hypochlorite or SPB in acidic soln. lead to the 2-chloromethyl derivs. The novel 5-nitro-1H-imidazole-2-acetic acid, which was required as a precursor of mols. of biol. interest, was fully characterized and converted to a known amide. Reaction of this acid with Vilsmeier's reagent gave an enamine deriv. and not the expected vinamidinium salt. This novel mode of reaction is attributable to intramol. hydrogen-bonding and favorable conjugation.

RX(5) OF 8



80%

REF: Tetrahedron, 54(33), 9603-9612; 1998

OF 1 CASREACT COPYRIGHT 2001 ACS